Mobile devices have become a critical driver of efficiency, allowing instant, remote access to information. For the oil and gas industry – employing mobile technologies can bridge considerable gaps in communication and data collection, reduce costs affiliated with inefficiencies and increase safety compliance.

According to a recent Pew study, 91 percent of the U.S. population connects through cellular phones, with a little over half specifically using smartphones. Tablet users are also growing exponentially with more than a third of American adults owning such a device. While these statistics aren’t shocking to anyone, the advent of touch-screen smartphones and tablets has enabled a culture of immediate access to information – more predomnately through the use of mobile apps. There doesn’t seem to be a task on earth that someone hasn’t built an app for. However, not every industry has embraced this trend. The mass implementation of mobile technology among upstream and downstream oil and gas producers is still in its infancy. Is the sector finally ready to seize the mobile technology opportunity?

To understand how mobile technology will evolve in this sector, start by considering how mobile applications will support oil and gas extraction and production. There is rich potential, including increased efficiencies, new data collection methods, and site and community safety improvements. Wireless communication and information is a critical next step towards America’s energy independence.

But what implementation advantages and disadvantages exist when it comes to mobile use? What types of products does the sector foresee using as the “app renaissance” approaches?

**BENEFITS OF MOBILE DEPLOYMENT**

Mobile devices have become a critical driver of efficiency, allowing instant, remote access to information necessary to complete even the most mundane task. For the oil and gas industry – relatively late adopters to wireless technology for a variety of reasons – employing mobile technologies can bridge considerable gaps in communication and data collection, reduce costs affiliated with inefficiencies and increase safety compliance.

As the industry further develops tools to enable seamless wireless connections, they will likely see a positive effect on reducing costs; for example, a decrease in time and resources for travel to and from rigs or production sites to monitor equipment and a reduction in labor incidents and environmental impact.

Currently, the industry is demanding and beginning to use the technology known as telemetry – a highly automated communications process by which measurements...
are made and other data collected by portable gas monitors and transmitted to centralized receiving equipment for monitoring. When one (or more) gas monitors go into alarm, they immediately notify workers in the area, allowing them to take proper caution. The product then relays information to a central hub where the source of the alarm can be identified, analysis performed and that information used as a predictive mechanism.

As more telemetry products come online, the industry can expect to see related mobile apps that will support this technology. In the future, safety officers and other off-site personnel will have the ability to aggregate information for easy viewing on a smartphone or tablet, further bridging the communication gap between on-site workers and distant command centers.

Equipment and production monitoring, data collection and review in hazardous environments are only a few benefits for employing a mobile app. They also can play a role in reviewing, annotating and corroborating other data, further ensuring the safety and wellbeing of those working and living near oil and gas sites.

TECHNOLOGICAL DRAWBACKS
While mobile devices seem like a natural tool for any business, the oil and gas industry faces tough implementation challenges, including network connectively and hardware longevity. Many oil rigs and production sites are located in remote locations onshore or off, making connectivity to a wireless network mediocre at best. As applications are developed for the sector, they cannot be entirely dependent on consistent network connections – it’s simply unrealistic for most areas. The second ever-present challenge for deploying mobile solutions is the hardening of the device itself. Currently, very few products can withstand the safety rigor, high bandwidth requirements, and the rugged environment in which such a device would operate. While product manufacturers are
further developing cases and devices that can endure a tough day on the job, companies and their workers are looking for other devices and platforms to carry out communication and information sharing.

**FINALLY, A FUTURE FOR OIL & GAS APPS**

When QR codes came on the scene a few years ago, marketers saw them as a way of making traditional advertisements interactive, providing consumers with immediate access to online information. Whether in a magazine advertisement or on a sign in the airport, advertisements began including the ubiquitous pixelated square in the corner. An interested customer, the theory went, could use their smartphone to scan the code and be automatically linked to a website with additional information.

But what if the codes were used to make a gas monitor safer? Already, leading gas detection manufacturers have implemented a system for automatic calibration of various products simply by scanning a bar code on the box the testing equipment arrived in. While this is just one example, companies are exploring the possible application of QR codes on instruction manuals and other documents which ultimately relay users back to interactive tutorials, case studies and service representatives.

On a larger scale, the oil and gas industry knows no constants when it comes to climate. From the sub-zero sands of northern Alberta to the scorching plains of west Texas, the industry – and its products – need to operate in extreme climates. Connectivity to weather patterns, seismic activity and other natural occurrences are just a few of the monitoring capabilities that are being developed for mobile applications.

A climate app is valuable when everything is running as it is supposed to . . . but may be even more important when everything
stops running perfectly. In the event of a gas or chemical incident, the application’s monitors could detect hazardous gas levels at the perimeter of an area, and model spread and exposure risk from additional data including wind direction and humidity levels. The path of the gas or vapor could be predicted based on wind patterns allowing for immediate amendments to evacuation protocol. Ultimately, the device would provide emergency services and personnel with the ability to mobilize swiftly and effectively.

From gas detection to well locators, the oil and gas industry is quickly expanding its app repertoire. Manufacturers of a variety of oil- and gas-related products are bringing their on-site tools and online platforms together, offering drillers and executives a way to obtain real-time information from any location.

GREAT TECHNOLOGICAL LEAPS
It’s time to stop contemplating why such a large industry is still in its infancy when it comes to deploying the use of mobile apps and other wireless technologies. The task now is to take advantage of what mobile phones and tablets can do for safety and efficiency in the oil and gas industry. Finding ways to connect and share expertise, technologically-advanced safety products and data is crucial to the industry’s overall success. By embracing and expanding research in mobile app development and other wireless communication, sector leaders will soon have on-demand information to support higher production.

In the ever-changing world of mobile communication – and the oil and gas industry – mobile apps are just the beginning.

This piece was originally published in the August 14, 2013 issue of Oil and Gas Monitor.

For more information, go to www.draeger.com